

Claims

- [c1] A method of forming electrical connection members on an electrical structure comprising the steps of:
providing an electrical structure with a set of contacts;
forming at least one interface layer adhering to said set of contacts;
patterning said interface layer to form a set of pads disposed over said set of contacts;
depositing and lithographically patterning a layer of photoresist with a set of apertures over said set of pads;
forming a set of conductive pins adhering directly to said pad;
forming a barrier layer adhering to all exposed surfaces of said set of pins;
forming a layer of solder surrounding the barrier layer;
and
reflowing the layer of solder.
- [c2] A method according to claim 1, in which the material of the barrier layer blocks passage of material from the pins, thereby preventing the material from the pins from reacting with a constituent of the solder.
- [c3] A method according to claim 1, in which the interface

layer comprises a layer of adhesion material and a seed layer.

- [c4] A method according to claim 2, in which the interface layer comprises a layer of adhesion material and a seed layer.
- [c5] A method according to claim 1, in which the interface layer includes material selected from the group comprising TiW, Ti, Ta, Cr and TaN.
- [c6] A method according to claim 2, in which the interface layer includes material selected from the group comprising TiW, Ti, Ta, Cr and TaN.
- [c7] A method according to claim 3, in which the interface layer includes material selected from the group comprising TiW, Ti, Ta, Cr and TaN.
- [c8] A method according to claim 4, in which the interface layer includes material selected from the group comprising TiW, Ti, Ta, Cr and TaN.
- [c9] A method according to claim 1, in which the pins are formed by electroplating material into the apertures in the photoresist.
- [c10] A method according to claim 1, in which the pins are plated with a wetting layer before the step of forming a

layer of solder.

- [c11] A method according to claim 10, in which the material of the barrier layer blocks passage of material from the pins, thereby preventing the material from the pins from reacting with a constituent of the solder.
- [c12] A method according to claim 10, in which the interface layer comprises a layer of adhesion material and a seed layer.
- [c13] A method according to claim 11, in which the interface layer comprises a layer of adhesion material and a seed layer.
- [c14] An electrical structure containing electrical connection members adapted for connecting to another electrical structure comprising:
 - a first set of contacts in an electrical structure;
 - at least one interface layer adhering to said set of contacts;
 - a set of pads disposed over said set of contacts and including said interface layer;
 - a set of conductive pins adhering directly to said pads;
 - a barrier layer adhering to all exposed surfaces of said set of pins; and
 - a layer of solder surrounding the barrier layer.

- [c15] A structure according to claim 14, in which the material of the barrier layer blocks passage of material from the pins, thereby preventing the material from the pins from reacting with a constituent of the solder.
- [c16] A structure according to claim 14, in which the interface layer comprises a layer of adhesion material and a seed layer.
- [c17] A structure according to claim 15, in which the interface layer comprises a layer of adhesion material and a seed layer.
- [c18] A structure according to claim 14, in which the interface layer includes material selected from the group comprising TiW, Ti, Ta, Cr and TaN.
- [c19] A structure according to claim 15, in which the interface layer includes material selected from the group comprising TiW, Ti, Ta, Cr and TaN.
- [c20] A structure according to claim 14, in which a wetting layer selected from the group comprising Cu and Au is formed on the barrier layer.